

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 39

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte HIROTAKA FUJISAKI

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Appeal No. 95-3742  
Application 08/176,287<sup>1</sup>

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HEARD: November 4, 1998

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Before HAIRSTON, KRASS, and TORCZON, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 6. In an Amendment After Final (paper number 25), claims 1 and 4 were amended, and claims 2 and 3 were canceled. Accordingly, claims 1 and 4 through 6 remain before us on appeal.

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<sup>1</sup> Application for patent filed December 30, 1993. According to appellant, the application is a continuation of Application 07/847,998, filed April 21, 1992.

Appeal No. 95-3742  
Application 08/176,287

The disclosed invention relates to a high frequency voltage controlled oscillator that includes a microstrip line resonator,  
and a trimming stub for adjusting the free-running frequency of the oscillator by changing the inductance of the resonator. The trimming stub is located parallel to the resonator.

Claim 1 is the only independent claim on appeal, and it reads as follows:

1. A high-frequency voltage controlled oscillator comprising:

a capacitance circuit comprising a voltage controlled variable capacitance element, a fixed capacitance element and means for applying a control voltage to said voltage controlled variable capacitance element;

a microstrip line serving as a resonator, said microstrip line having a first end connected to said capacitance circuit and a second end connected to ground; and

a trimming stub for adjusting a free-running frequency, said trimming stub being provided in parallel with said microstrip line so that an oscillation frequency of said high-frequency voltage controlled oscillator is controlled in accordance with said control voltage and said free-running frequency is finely adjusted by using said trimming stub to change an inductance of said microstrip line.

The reference relied on by the examiner is:

Stajcer

4,818,956

April 4, 1989

Clams 1 and 4 through 6 stand rejected under 35 U.S.C. § 103 as being unpatentable over admitted prior art Figures 2 and 3 in view of Stajcer.

Reference is made to the final rejection, the brief and the answer for the respective positions of the appellant and the examiner.

#### OPINION

We have carefully considered the entire record before us, and we will reverse the obviousness rejection of claims 1 and 4 through 6.

Stajcer discloses (column 2, lines 10 and 11) a plurality of tuning pads 28 located adjacent to metalization 24 (Figure 2). Based upon this disclosure in Stajcer, the examiner contends (final rejection, pages 2 and 3) that:

[I]t would have been obvious to one having ordinary skill in the art at the time the invention was made to use trimming stubs in parallel with strip line L1 [admitted prior art Figure 3] instead of in series, because the two ways of providing trimming stubs are functional equivalents. Further, if it was desired to ground one end of strip line L1, as shown in applicant's Fig. 1, then parallel trimming stubs would be the logical choice since

series trimming stubs could not  
be used.

Appellant argues (Brief, page 3) that the trimming stub in admitted prior art Figure 3 is in series with the microstrip line resonator, and that it would be "impossible to connect one end of the microstrip line to ground." With respect to Stajcer, appellant argues (Brief, page 3 and 4) that "[t]he device of Stajcer is not a voltage controlled oscillator," and that:

As shown in Fig. 2 of Stajcer, tuning pads 28 are provided alongside a low-impedance transformer including metallization 24. This low-impedance transformer is not provided as a microstrip line resonator for adjusting an oscillation frequency, but is instead provided together with open-circuited microstrip stub 26 for matching an output of the FET relative to a 50-ohm output transmission line. Accordingly, tuning pads 28 have no role in adjusting an oscillation frequency, but instead are provided for matching the 50-ohm output transmission line to maximize the output signal.

Appellant then concludes (Brief, pages 4 and 5) that:

As explained above, Stajcer's tuning pads 28 are provided for matching the output impedance, but not for adjusting the frequency. Thus, the combination suggested in the Final

Rejection would not have resulted in the instant claimed invention. Indeed, because of the above-noted differences between the device of Stajcer and a voltage-controlled oscillator, a person having ordinary skill in the art would not have been taught that Stajcer's tuning pads would have any use in a voltage-controlled oscillator like that of the appellant's admitted prior art. As a consequence, the references provide no motivation to make the combination suggested in the Final Rejection.

The Final Rejection, at the bottom of page 2, argues that if it were desired to ground one end of strip line L1 of Fig. 1 of the instant application, parallel trimming stubs would be the logical choice. However, because the Final Rejection includes no showing that a person having ordinary skill in the art would have desired to ground one end of strip line L1, this argument rests on impermissible hindsight. In addition, even if a person having ordinary skill in the art so desired, neither of the applied references teaches or suggests even the possibility of arranging trimming stubs in parallel with a microstrip line serving as a resonator.

The penultimate sentence in appellant's conclusion is in error because Figure 2 of the admitted prior art shows a grounded microstrip line L1. The ultimate sentence in appellant's conclusion is, however, correct because "neither

of the applied references teaches or suggests even the possibility of arranging trimming stubs in parallel with a microstrip line serving as a resonator." Appellant's conclusion concerning the trimming stubs or tuning pads 28 in Stajcer is correct because the tuning pads 28 "are located adjacent to the metalization 24" (column 2, lines 10 and 11) to maximize the output power from the drain 22 (column 4, lines 11 through 13), and not to adjust an oscillation frequency.

In summary, it is apparent that the only teaching or suggestion of a grounded microstrip resonator with a parallel trimming stub is appellant's disclosed and claimed invention, and such teachings are not available to the examiner in the formulation of a prima facie case of obviousness. Thus, the obviousness rejection of claims 1 and 4 through 6 is reversed.

#### DECISION

The decision of the examiner rejecting claims 1 and 4 through 6 under 35 U.S.C. § 103 is reversed.

#### REVERSED

Appeal No. 95-3742  
Application 08/176,287

Kenneth W. Hairston	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
Errol A. Krass	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
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Richard Torczon	)	
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